REMARKS

The Examiner has rejected claims 1, 2, 5, 7-8, 11, 14-16 and 18-20 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,731,811 to Rose in view of U.S. Patent 6,154,776 to Martin. The Examiner has further rejected claims 9, 10, 12 and 13 under 35 U.S.C. 103(a) as being unpatentable over Rose in view of Martin, and further in view of U.S. Patent 5,742,343 to Haskell et al. In addition, the Examiner has rejected claims 17 and 21-25 under 35 U.S.C. 103(a) as being unpatentable over Rose in view of Martin, and further in view of U.S. patent 7,274,661 to Harrell et al.

Claim 1 claims:

"A method for providing heterogeneous layered video support, comprising the acts of:

constructing signaling information defining how at least two layers (BS, ES) are to be combined at a decoder; and

transmitting the signaling information along with the at least two layers (BS, ES) in a transport stream to the decoder,

wherein said signaling information is constructed as a plurality of parameter lists,

and wherein each of said plurality of parameter lists define a unique quality of service (QOS) of said transport stream."

The Rose patent discloses a scalable predictive coding method and apparatus.

The Martin patent discloses quality of service allocation on a network.

Claim 1 includes the limitations "wherein said signaling information is constructed as a plurality of parameter lists" and "wherein each of said plurality of parameter lists define a unique quality of service (QOS) of said transport stream."

The Examiner indicates "It is noted that although Rose provides a signaling information constructed as a plurality of parameter lists (See Rose col. 5, lines 17-44), it is silent about defining, from the plurality of parameter, a unique quality of service of the transport."

First, Applicants would like to point out that Rose does not disclose providing a signaling information constructed as a plurality of parameter lists". In particular, Rose, at col. 5, lines 17-44, states:

> "In the enhancement layer encoder 100 of the present invention, an enhancement layer estimator (ELE) 102 computes a new predicted frame 104, xe(n), by combining information from the reconstruction frame 106 at the base layer, xb(n) and from the previous reconstructed frame 108 at the enhancement layer xe(n-1). Note that first order prediction is described for notational simplicity but several previous frames may be used. The combining rule depends on any or all of, but not limited to, the following parameters: the compression parameters 110 of the base layer (such as quantization step and threshold, and the quantized baselayer residual 112, [ben), (see FIG. 3)), and the statistical parameters 114 of the time evolution of the frames (such as inter-frame correlation coefficients and variance). The statistical parameters may be either estimated off-line from training data, or estimated on-line by an adaptive estimator which tracks variation in the signal statistics based on either the original signal (in which case the parameters need to be transmitted to the decoder) or based on reconstructed signals which are available to the receiver. The exact definition of the combination rule depends on the level of complexity allowed for the module. At the high end, one may compute a possibly complex, optimal predicted

> frame given all the available information. The enhancement layer residual 116, rin), which is the difference between the input frame 118, x(n), and the predicted frame 104, xe(n), is then compressed by a compressor 120 to produce the enhancement bits 122."

Applicants submit that it should be clear from the above that Rose is only contemplating the compression parameters 110 and the statistical parameters 114, in which the statistical parameters 114 may be either estimated off-line, or estimated on-line. Hence, the only parameters being included in the transport stream are the compression parameters. However, there is no disclosure or suggestion in Rose "wherein said signaling information is constructed as a plurality of parameter lists" and "wherein each of said plurality of parameter lists define a unique quality of service (QOS) of said transport stream."

The Examiner now indicates that Martin discloses "a method for providing video support wherein each of the plurality of parameter lists define a unique quality of service of the transport stream (See Martin col. 4, lines 52-60, col. 7, lines 20-28 and lines 47-54)."

Applicants submit that the Examiner is mistaken. In particular, while Martin relates to Quality of Service (QoS), this information is not transmitted in a transport stream with at least two layers. Rather, the QoS for a particular user is allocated by a QoS server 20 separate from any transport stream containing at least two layers being received by the user, wherein the QoS mechanism interface 43 (which may be a part of the QoS server) samples packets relating to the information flow and extracts

selected parameters representative of the flow. Hence, Applicants submit that Martin neither discloses nor suggests "wherein each of said plurality of parameter lists define a unique quality of service (QOS) of said transport stream."

Applicants therefore believe that claim 1 is patentable over Rose and Martin. Further, since claim 19 contains similar limitations, claim 19 should also be patentable over Rose and Martin. In addition, claims 2 and 18 depend from claim 1, while claim 20 depends from claim 19, and further limit claims 1 and 19, respectively. As such, claims 2, 18 and 20 should also be patentable over Rose and Martin.

Claim 5 claims:

"A method for providing heterogeneous layered video support, comprising the acts of:

constructing signaling information defining how at least two layers (BS, ES) are to be combined at a decoder; and

transmitting the signaling information along with the at least two layers (BS, ES) in a transport stream to the decoder,

wherein said signaling information is constructed as a parameter list,

wherein said parameter list is comprised of a plurality of parameter values,

and wherein one of said parameter values defines, for a corresponding layer, a DC compensation."

The Examiner states "As per claims 5, 7, most of the limitations of these claims have been noted in the above rejection of claim 1. In addition, Rose further discloses constructing signaling information as a plurality of parameter lists (See col. 5, lines 25-37)."

Applicants would like to point out that claim 5 includes the limitations "wherein said signaling information is constructed as a parameter list", "wherein said parameter list is comprised of a plurality of parameter values" and "wherein one of said parameter values defines, for a corresponding layer, a DC compensation."

As indicated above, the noted section of Rose merely states that use of compression parameters and statistical parameters, and that the statistical parameters are estimated. Hence, the only parameters that are transmitted in the transport stream of Rose are the compression parameters.

Applicants therefore submit that it should be apparent from the above that Rose makes no mention of DC compensation either in the above section, or anywhere else.

As such, Applicants believe that claim 5 is patentable over Rose and Martin. Applicants further submit that since claims 7, 11, 14 and 15 depend from and further limit claim 5, these claims should also be patentable over Rose and Martin.

Claim 9 includes the limitation "wherein at least two of said parameter values define, for a corresponding layer, horizontal FIR coefficients for to a filtering operation required to combine

the corresponding layer with a reference layer", while claim 10 include the limitation "wherein at least two of said parameter values define, for a corresponding layer, vertical FIR coefficients for a filtering operation required to combine the corresponding layer with a reference layer".

Claim 12 includes the limitation "wherein a ratio of two of said parameter values defines, for a corresponding layer, a horizontal scaling factor", while claim 13 includes the limitation "wherein a ratio of two of said parameter values defines, for a corresponding layer, a vertical scaling factor".

The Haskell et al. patent discloses a scalable encoding and decoding of high-resolution progressive video.

The Examiner has indicated that "Rose is silent about defining horizontal and vertical FIR coefficients for a filtering operation as specified" and that "Haskell provides a method for providing heterogeneous layered video including defining horizontal and vertical FIR coefficients for a filtering operation (See Haskell col. 5, lines 1-7, col. 7, lines 63-67, col. 8, lines 1-11).

With regard to claims 9 and 10, Applicants submit that the Examiner is mistaken. In particular, while Haskell et al. discloses the use of a finite-impulse-response (FIR) temporal filter, Haskell et al. is silent with regard to any coefficients needed for such a filter, and that such coefficients should be included in signal information sent with the at least two layer signals. Further,

Haskell et al. does not supply that which is missing from Rose and Martin as noted above.

With regard to claims 12 and 13, Applicants would like to note that these claims are related to horizontal and vertical scaling factors and not to FIR filters. As such, Applicants believe that the Examiner's rejection thereof based on Rose/Martin/Haskell et al. is erroneous.

Claim 17 claims "The method as claimed in Claim 5, wherein one of said parameters defines whether a corresponding layer contains one of an interlaced or progressive video stream."

The Harrell et al. patent discloses a flow control method for quality streaming of audio/video/media over packet networks.

The Examiner has conceded that "the combination of Rose and Martin is silent about providing heterogeneous layered video wherein one of the parameters defines whether a corresponding layer contains one of an interlaced or progressive stream", and then adds "Harrell provides a method for providing layered video support wherein one of the parameters defines whether a corresponding layer contains one of an interlaced or progressive stream (See Harrell col. 5, lines 1-7 and col. 6, lines 2-16)."

Applicants believe that the Examiner is mistaken. In particular, Harrell et al. does not distinguish between interlaced or progressive video streams, and whether the signal information should include such a definition. In fact, Harrell et al. does not even mention the term "interlaced", and only mentions the term

"progressive" at col. 15, line 7 as in "Progressive Fine Granularity Scalable (PFGS) coding". Hence, Applicants submit that the combination of Rose, Martin and Harrell et al. does not render claim 17 obvious.

Claims 21-25 relate to the transmission of the two layers and the signaling information over Internet protocol, where the signaling informaiton is transmitted either in-band or out-of-band.

The Examiner has indicated that "Harrell provides a method for providing layered video support including transmitting the layers (BS ES) over Internet Protocol using real-time transport protocol while the transmission session is performed either in-band of out-of-band (See Harrell col. 4, lines 23-37)."

Applicants submit that the Examiner is mistaken. While Harrell et al. arguably discloses transmission of video information over Internet protocol, there is no disclosure or suggestion of the signaling information being transmitted either in-band or out-of-band. Further, Applicants submit that Harrell et al. does not supply that which is missing from Rose and Martin.

In view of the above, Applicants believe that the subject invention, as claimed, is neither anticipated nor rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1, 2, 5, 7 and 9-25, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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